108050000-TD00003-R00

Spallation Neutron Source

CF Controls
Overview/Navigational Screens
Functional System Design (FSD)

January, 2003

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SNS Project Engineer

Overview/Navigational Screens Description
TD00003 Rev 0; January 13, 2003

CF Controls screens are arranged in a hierarchy with several layers.

The top layer contains a site overview screen and the alarm handler screen. These are the first two screens in this document.

All screens can be accessed by starting at the Site Overview screen. Also, each screen has buttons that will present the Site Overview or the Alarm Handler screen. This insures that access to these screens is always available so that alarms may be viewed at any time and starting the navigation process through the layers can begin at any time. The Site Overview screen has buttons to select building overview screens and system overview screens – which comprise the second layer. These screens in turn have buttons to select screens in the third layer and so forth.

System overview screens are displayed first in this document, building overview screens afterward. The power system button displays a menu of power overview screens that are available. Two CUB overview screens are provided. One shows the swing cell valved to the condenser water system and one to the tower water system. The screen appropriate to the valving selected is what is displayed. Note that Linac and Ring Makeup Air Handler and Linac tunnel Air handler screens are accessed from the tunnel operation screens – not the Klystron building or Ring service building overview screens.

As screens are selected, previously selected screens will not be closed automatically. Each screen has a Close button that will close the screen. (If all previously selected screens are closed, the Site Overview button on the displayed screen should be used to return to the Site Overview screen and begin navigating the hierarchy again). Leaving previously selected screens open will show the path taken from the Site Overview screen. Thus reversing this path can be accomplished by selecting one of the previously selected screens.

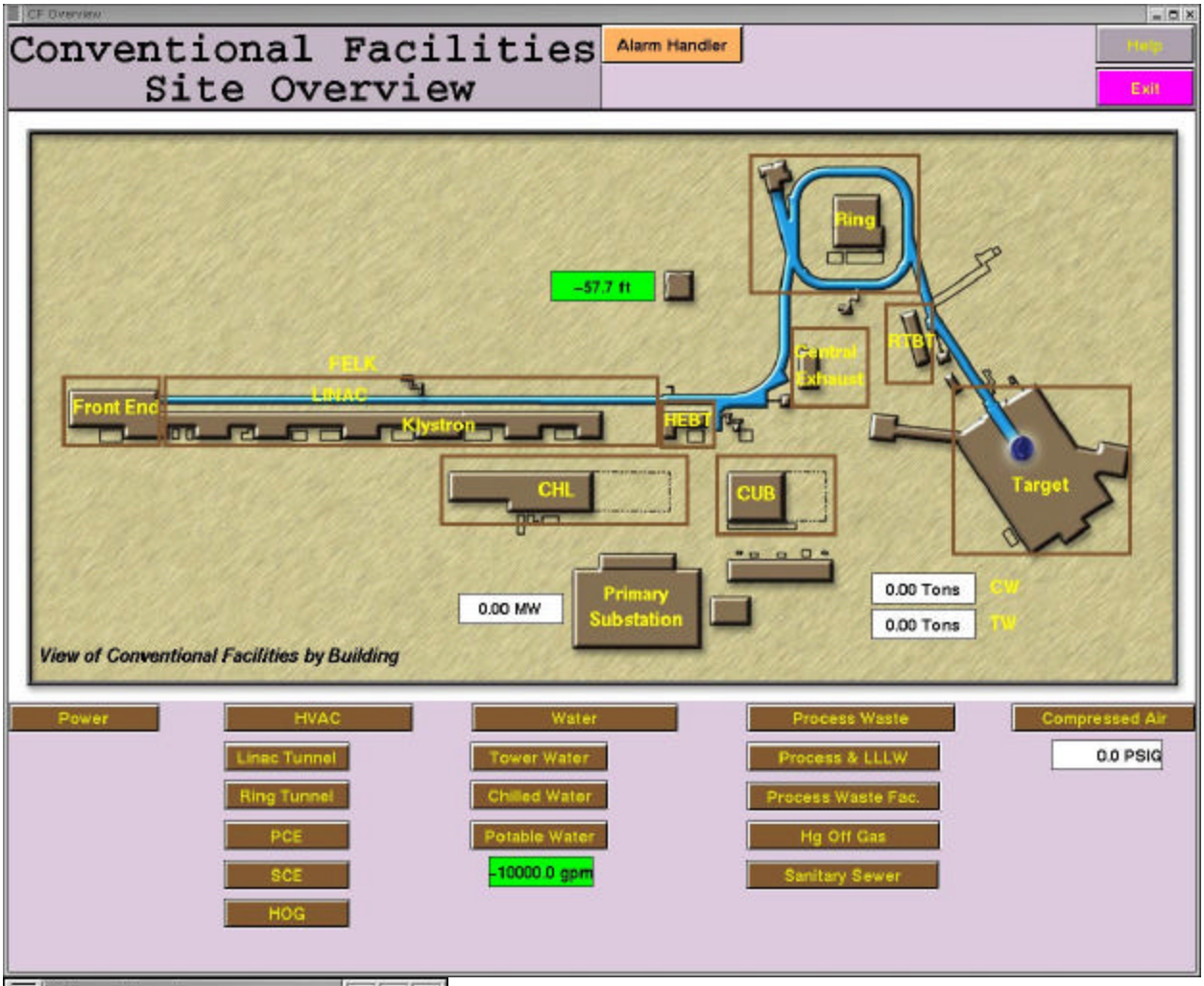
Most of the lower layers have multiple screens. In some of these layers it is desirable to navigate between the screens within a layer. In some cases, Previous Screen and Next Screen buttons are provided to step through screens in a layer. Also in some cases a menu button is provided. Pointing to the menu button will show a listing of all screens in the layer. A screen may be selected from the menu.

Seldom will a menu button be provided on a screen in one layer that will show screens in a lower layer. Buttons will be provided for screens in the next lower layer. Access to screens in a lower layer is provided by selecting one of the screens in that layer and then navigating horizontally with the Previous Screen, Next Screen, or menu buttons provided.

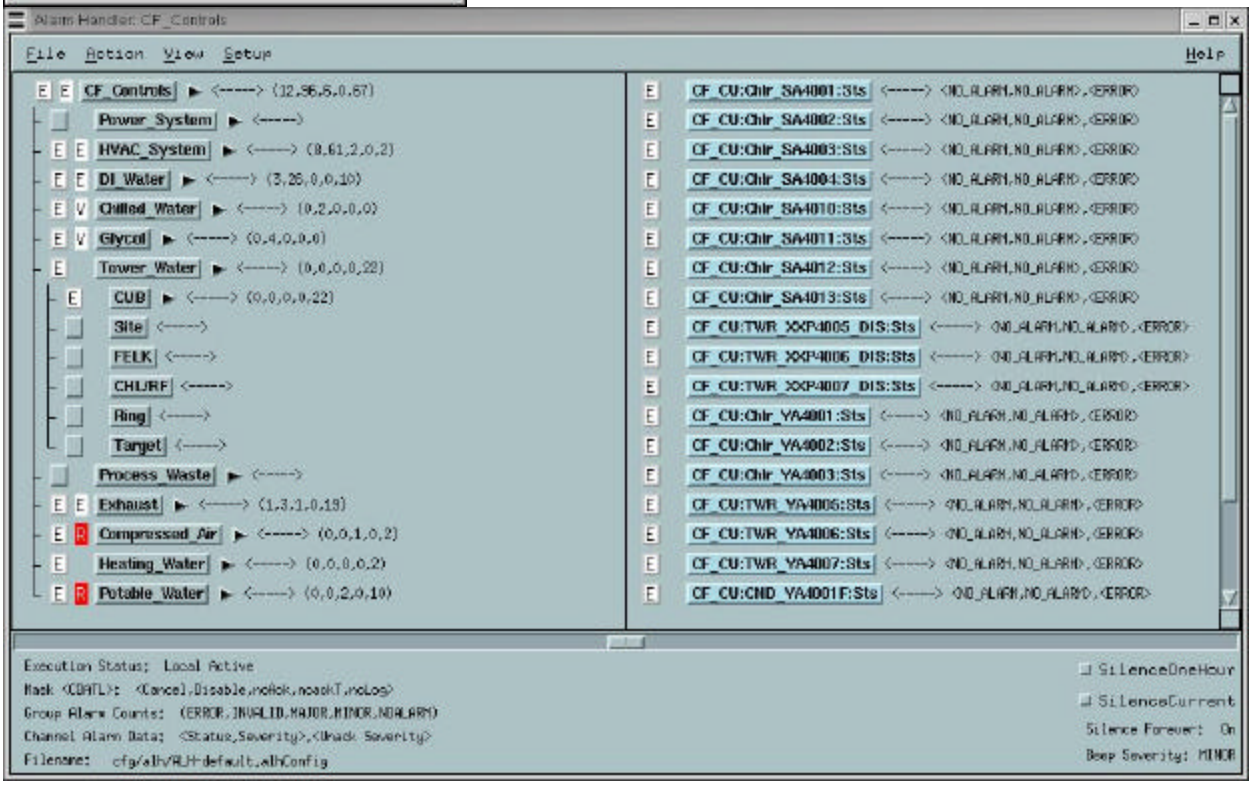
The screens below are those provided for the top two layers. Target building overview screens have not been constructed at this time. They will be added in the near future.

Several links have been provided to show a demonstration of how this navigation works. Since Acrobat does not leave previously selected screens open like EPICS will, this feature is not demonstrated. Also, Acrobat does not allow demonstrating the menu button feature. Links are shown as visible rectangles so that they may be found easily. These rectangles will not appear on EPICS screens.

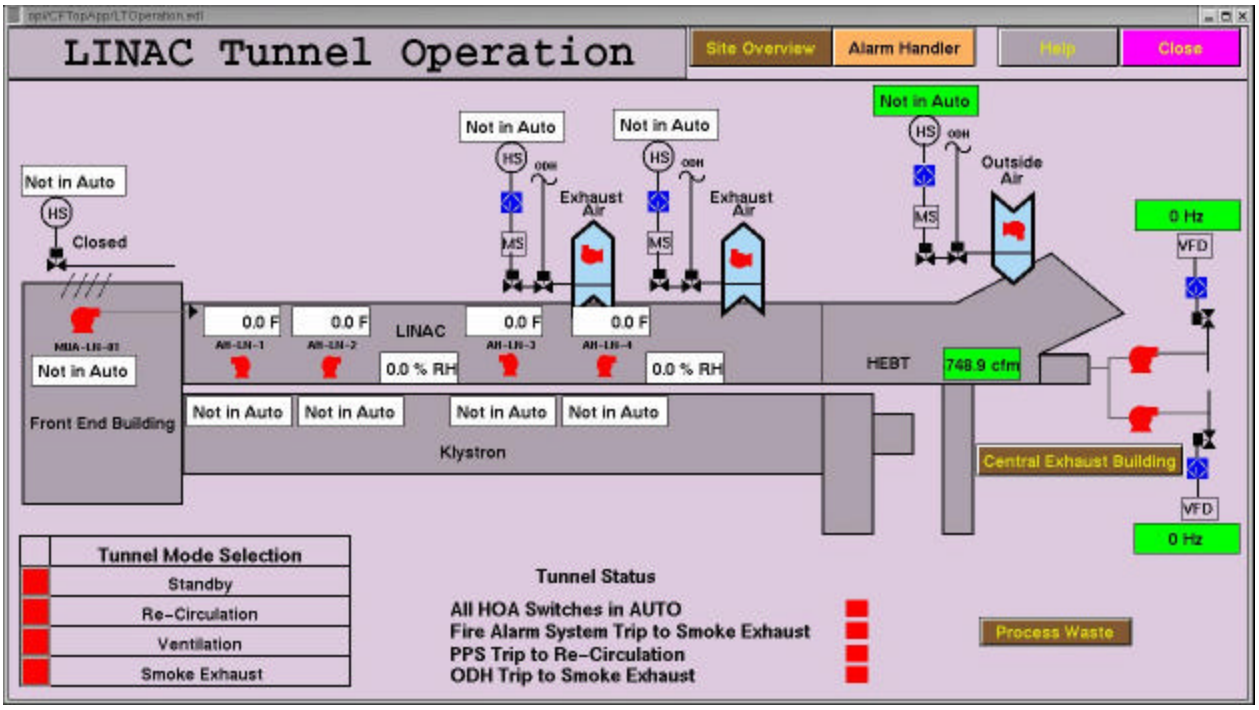
It is intended that these screens be used as “comfort” screens by being displayed at all times and other information obtained by navigation screens on lower layers.

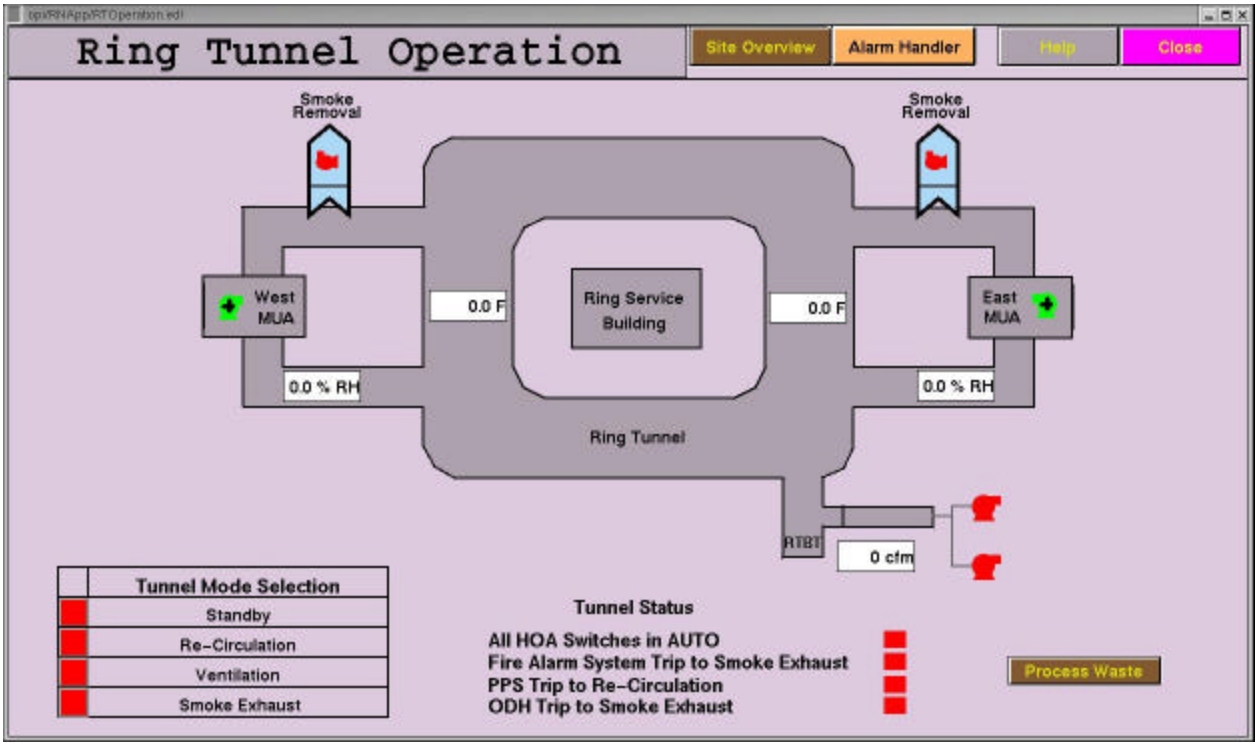

CF Overview
Conventional Facilities
Site Overview
Alarm Handler
Help
Exit
Ring
-57.7 ft
RTBT
Central
Exhaust
FELK
LINAC
Front End
Klystron
HEBT
CHL
CUB
Target
0.00 MW
Primary
Substation
0.00 Tons
CW
0.00 Tons
TW
View of Conventional Facilities by Building
Power
HVAC
Linac Tunnel
Ring Tunnel
PCE
SCE
HOG
Water
Tower Water
Chilled Water
Potable Water
-10000.0 gpm
Process Waste
Process & LLLW
Process Waste Fac.
Hg Off Gas
Sanitary Sewer
Compressed Air
0.0 PSIG


Alarm Handler
CF_Controls


Alarm Handler: CF_Controls
File Action View Setup
Help
CF_Controls
Power_System
HVAC_System
DI_Water
Chilled_Water
Glycol
Tower_Water
CUB
Site
FELK
CHLRF
Ring
Target
Process_Waste
Exhaust
Compressed_Air
Heating_Water
Potable_Water
CF_CU:Chlr_SA4001:Sts
CF_CU:Chlr_SA4002:Sts
CF_CU:Chlr_SA4003:Sts
CF_CU:Chlr_SA4004:Sts
CF_CU:Chlr_SA4010:Sts
CF_CU:Chlr_SA4011:Sts
CF_CU:Chlr_SA4012:Sts
CF_CU:Chlr_SA4013:Sts
CF_CU:TWR_XXP4005_DIS:Sts
CF_CU:TWR_XXP4006_DIS:Sts
CF_CU:TWR_XXP4007_DIS:Sts
CF_CU:Chlr_YA4001:Sts
CF_CU:Chlr_YA4002:Sts
CF_CU:Chlr_YA4003:Sts
CF_CU:TWR_YA4005:Sts
CF_CU:TWR_YA4006:Sts
CF_CU:TWR_YA4007:Sts
CF_CU:CND_YA4001F:Sts
Execution Status: Local Active
Mask <CDATL>: <Cancel,Disable,noAck,noAckT,noLog>
Group Alarm Counts: (ERROR,INVALID,MAJOR,MINOR,NOALARM)
Channel Alarm Data: <Status,Severity>,<Unack Severity>
Filename: cfg/alh/ALH-default.alhConfig
SilenceOneHour
SilenceCurrent
Silence Forever: On
Beep Severity: MINOR

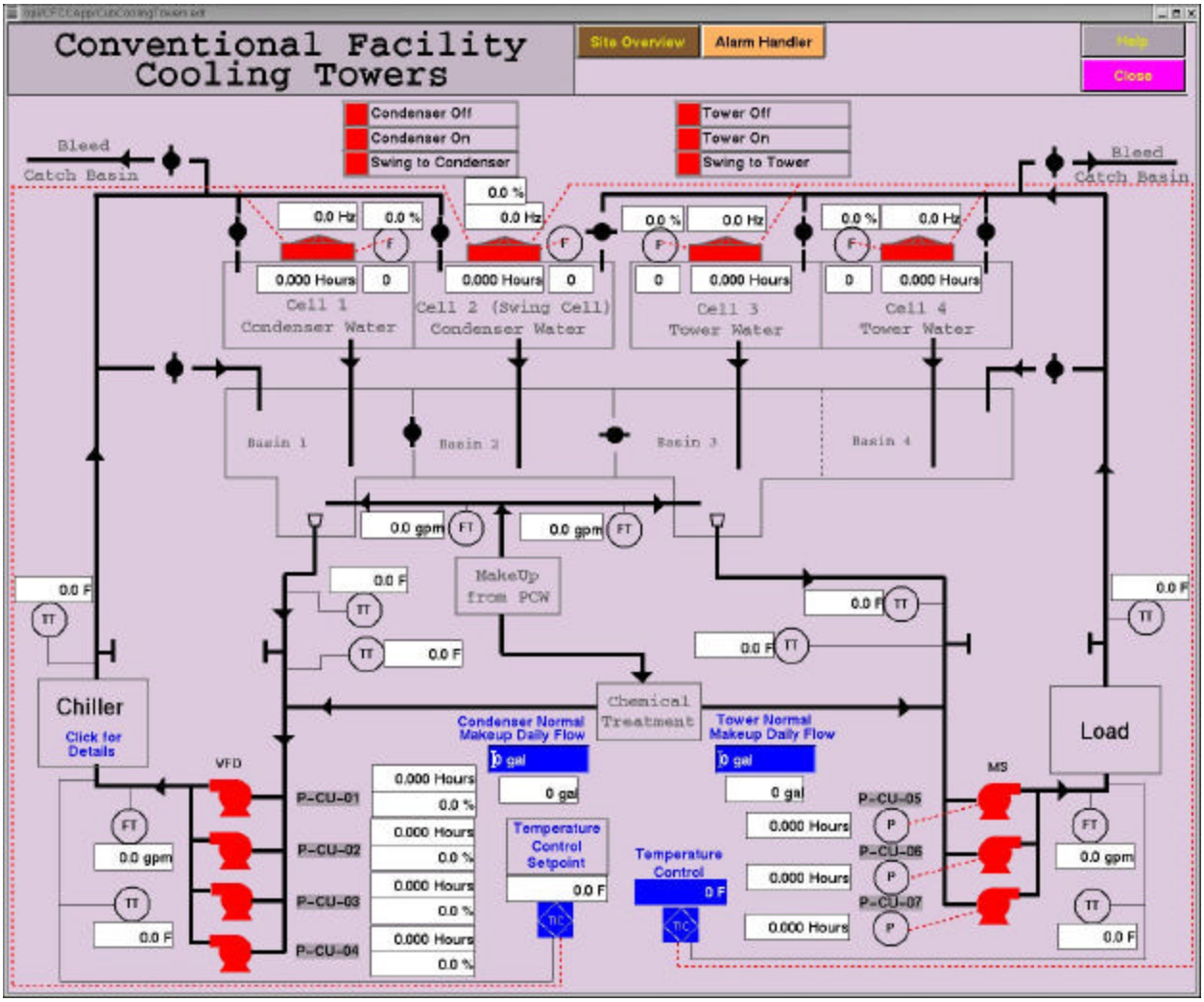
System Overview Screens

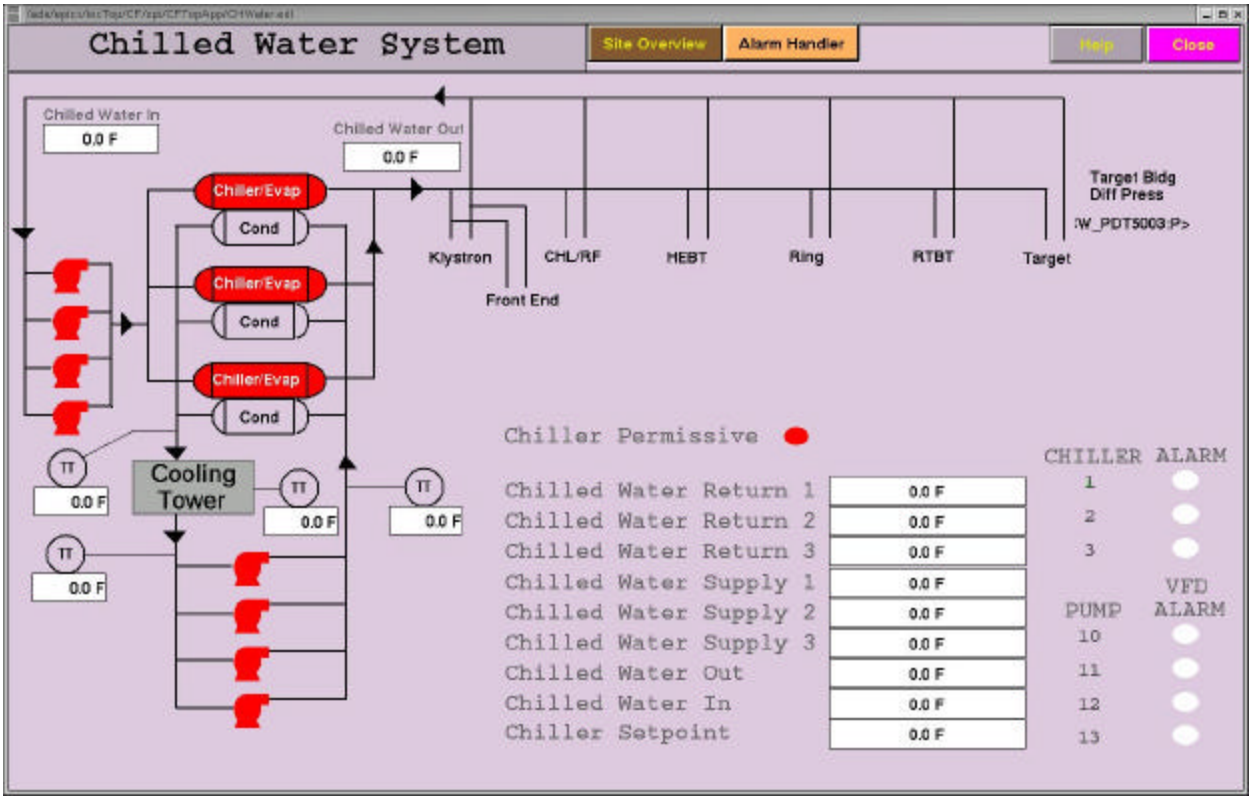

LINAC Tunnel Operation
Site Overview
Alarm Handler
Help
Close
Not in Auto
HS
Closed
Not in Auto
Front End Building
Not in Auto
HS
ODH
Exhaust Air
MS
Not in Auto
HS
ODH
Exhaust Air
MS
Not in Auto
HS
ODH
Outside Air
MS
0 Hz
VFD
0.0 F
0.0 F
LINAC
0.0 F
0.0 F
0.0 % RH
0.0 % RH
HEBT
748.9 cfm
Not in Auto
Not in Auto
Not in Auto
Not in Auto
Klystron
Central Exhaust Building
VFD
0 Hz
Tunnel Mode Selection
Standby
Re-Circulation
Ventilation
Smoke Exhaust
Tunnel Status
All HOA Switches in AUTO
Fire Alarm System Trip to Smoke Exhaust
PPS Trip to Re-Circulation
ODH Trip to Smoke Exhaust
Process Waste

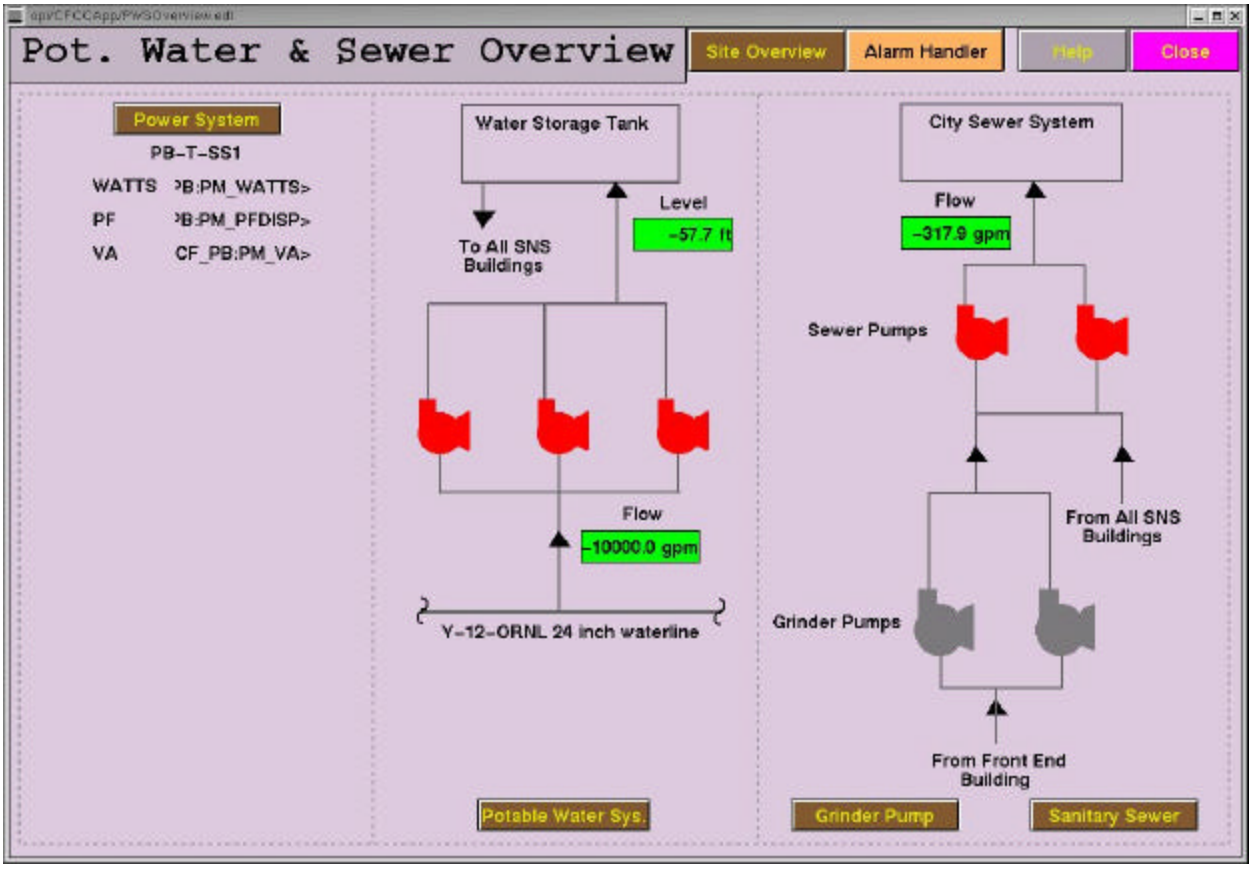

Ring Tunnel Operation
Site Overview
Alarm Handler
Help
Close
Smoke Removal
Smoke Removal
West MUA
0.0 F
Ring Service Building
0.0 F
East MUA
0.0 % RH
0.0 % RH
Ring Tunnel
RTBT
0 cfm
Tunnel Mode Selection
Standby
Re-Circulation
Ventilation
Smoke Exhaust
Tunnel Status
All HOA Switches in AUTO
Fire Alarm System Trip to Smoke Exhaust
PPS Trip to Re-Circulation
ODH Trip to Smoke Exhaust
Process Waste

Target Building HVAC Overview Screens (under construction)

- Primary Containment Exhaust (PCE)
- Secondary Containment Exhaust (SCE)
- Hot Off Gas (HOG)

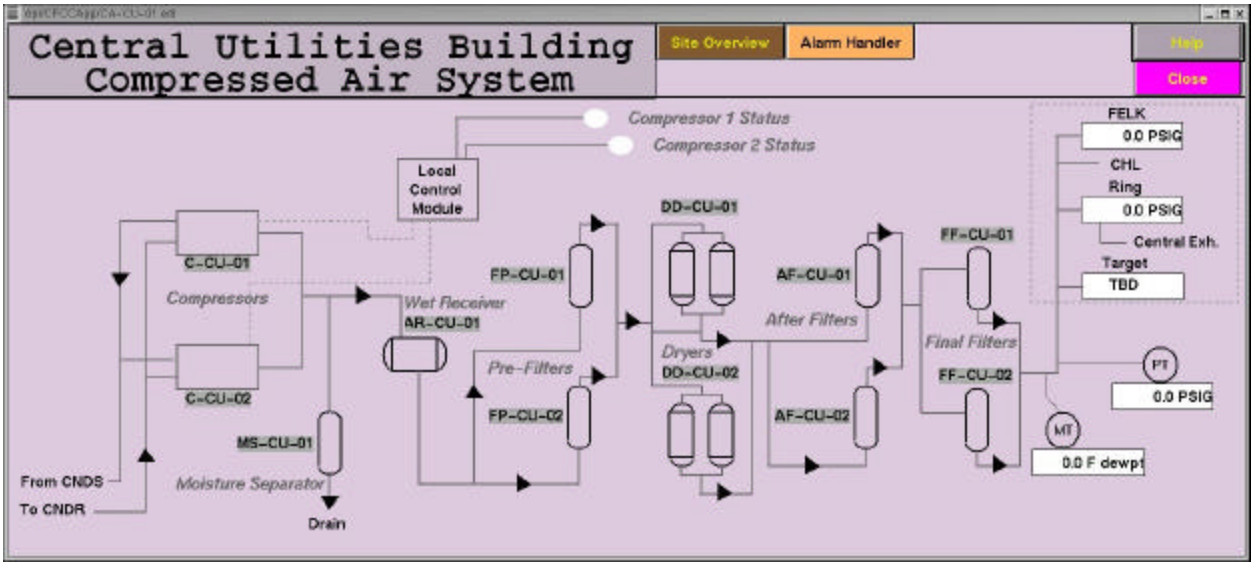

Conventional Facility Cooling Towers
Site Overview
Alarm Handler
Help
Close
Condenser Off
Condenser On
Swing to Condenser
Tower Off
Tower On
Swing to Tower
Bleed Catch Basin
Bleed Catch Basin
0.0 Hz
0.0 %
0.000 Hours
0
Cell 1 Condenser Water
Cell 2 (Swing Cell) Condenser Water
Cell 3 Tower Water
Cell 4 Tower Water
Basin 1
Basin 2
Basin 3
Basin 4
0.0 gpm
FT
MakeUp from PCW
0.0 F
TT
Chiller
Click for Details
Chemical Treatment
Condenser Normal Makeup Daily Flow
Tower Normal Makeup Daily Flow
0 gal
Load
VFD
MS
P-CU-01
P-CU-02
P-CU-03
P-CU-04
P-CU-05
P-CU-06
P-CU-07
Temperature Control Setpoint
Temperature Control
TIC
P


Chilled Water System
Site Overview
Alarm Handler
Help
Close
Chilled Water In
0.0 F
Chilled Water Out
0.0 F
Chiller/Evap
Cond
Chiller/Evap
Cond
Chiller/Evap
Cond
Cooling Tower
TT
0.0 F
TT
0.0 F
TT
0.0 F
TT
0.0 F
Klystron
Front End
CHL/RF
HEBT
Ring
RTBT
Target
Target Bldg Diff Press
:W_PDT5003:P>
Chiller Permissive
Chilled Water Return 1
Chilled Water Return 2
Chilled Water Return 3
Chilled Water Supply 1
Chilled Water Supply 2
Chilled Water Supply 3
Chilled Water Out
Chilled Water In
Chiller Setpoint
0.0 F
CHILLER ALARM
1
2
3
PUMP
VFD ALARM
10
11
12
13

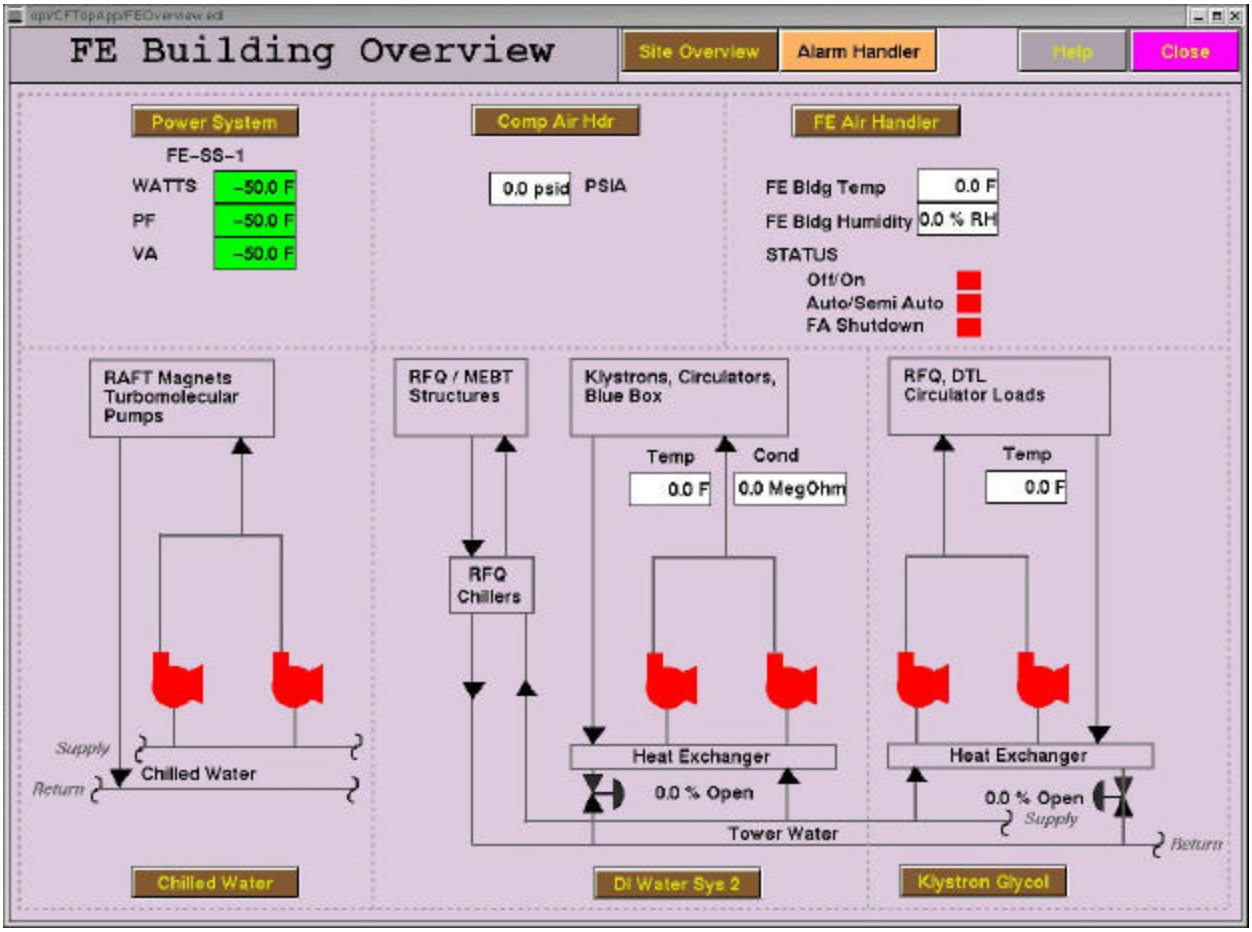

Pot. Water & Sewer Overview
Site Overview
Alarm Handler
Help
Close
Power System
PB-T-SS1
WATTS
PF
VA
CF_PB:PM_VA>
Water Storage Tank
To All SNS Buildings
Level
-57.7 ft
Flow
-10000.0 gpm
Y-12-ORNL 24 inch waterline
City Sewer System
Flow
-317.9 gpm
Sewer Pumps
From All SNS Buildings
Grinder Pumps
From Front End Building
Potable Water Sys.
Grinder Pump
Sanitary Sewer

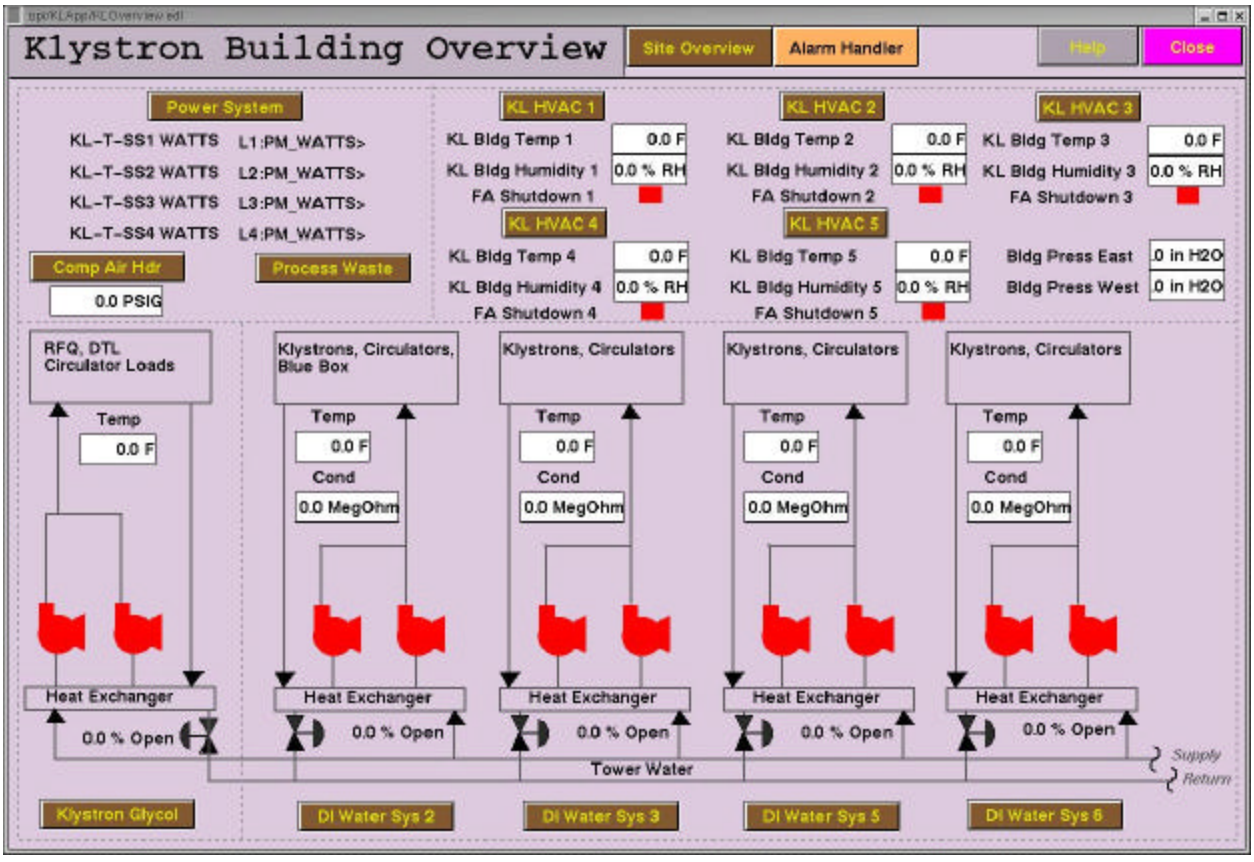
Process Waste Overview Screens (under construction)

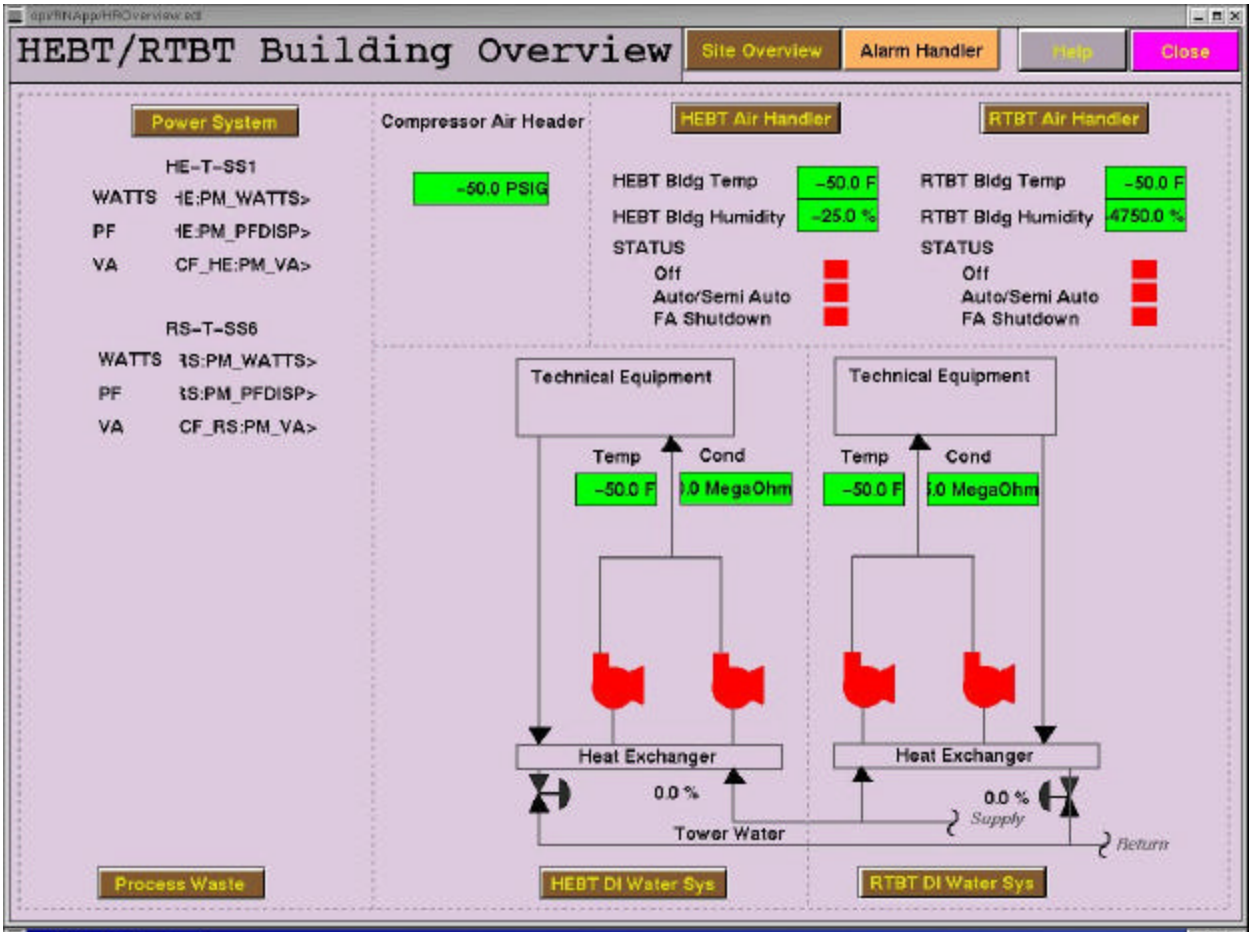
- Process & LLLW Overview
- Process Waste Facility Overview
- Hg Off Gas

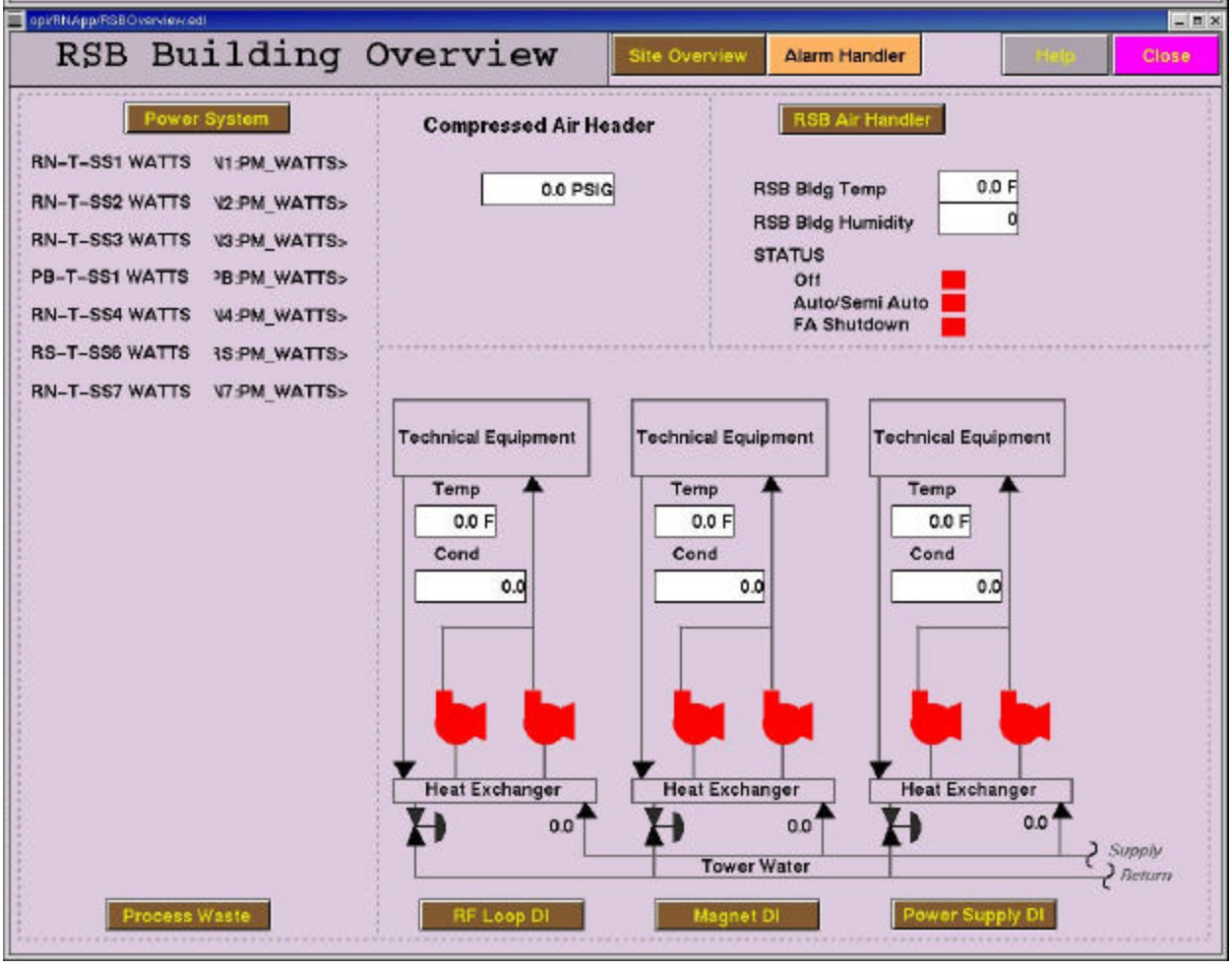

Central Utilities Building
Compressed Air System
Site Overview
Alarm Handler
Help
Close
Compressor 1 Status
Compressor 2 Status
Local Control Module
C-CU-01
Compressors
C-CU-02
Wet Receiver
AR-CU-01
FP-CU-01
Pre-Filters
FP-CU-02
DD-CU-01
Dryers
DD-CU-02
AF-CU-01
After Filters
AF-CU-02
FF-CU-01
Final Filters
FF-CU-02
FELK
0.0 PSIG
CHL Ring
0.0 PSIG
Central Exh. Target
TBD
PT
0.0 PSIG
MT
0.0 F dewpt
MS-CU-01
Moisture Separator
Drain
From CNDS
To CNDR

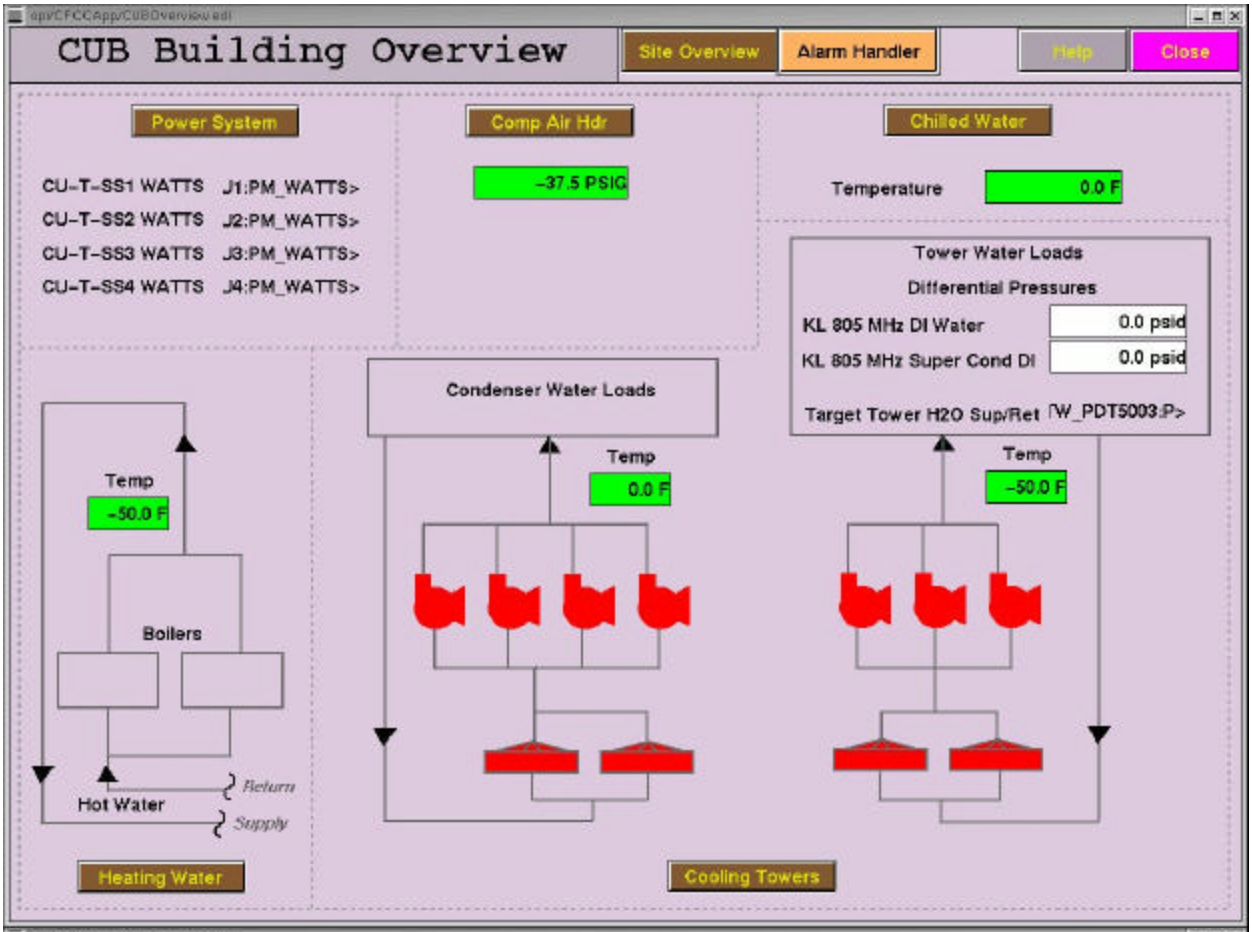
Building Overview Screens

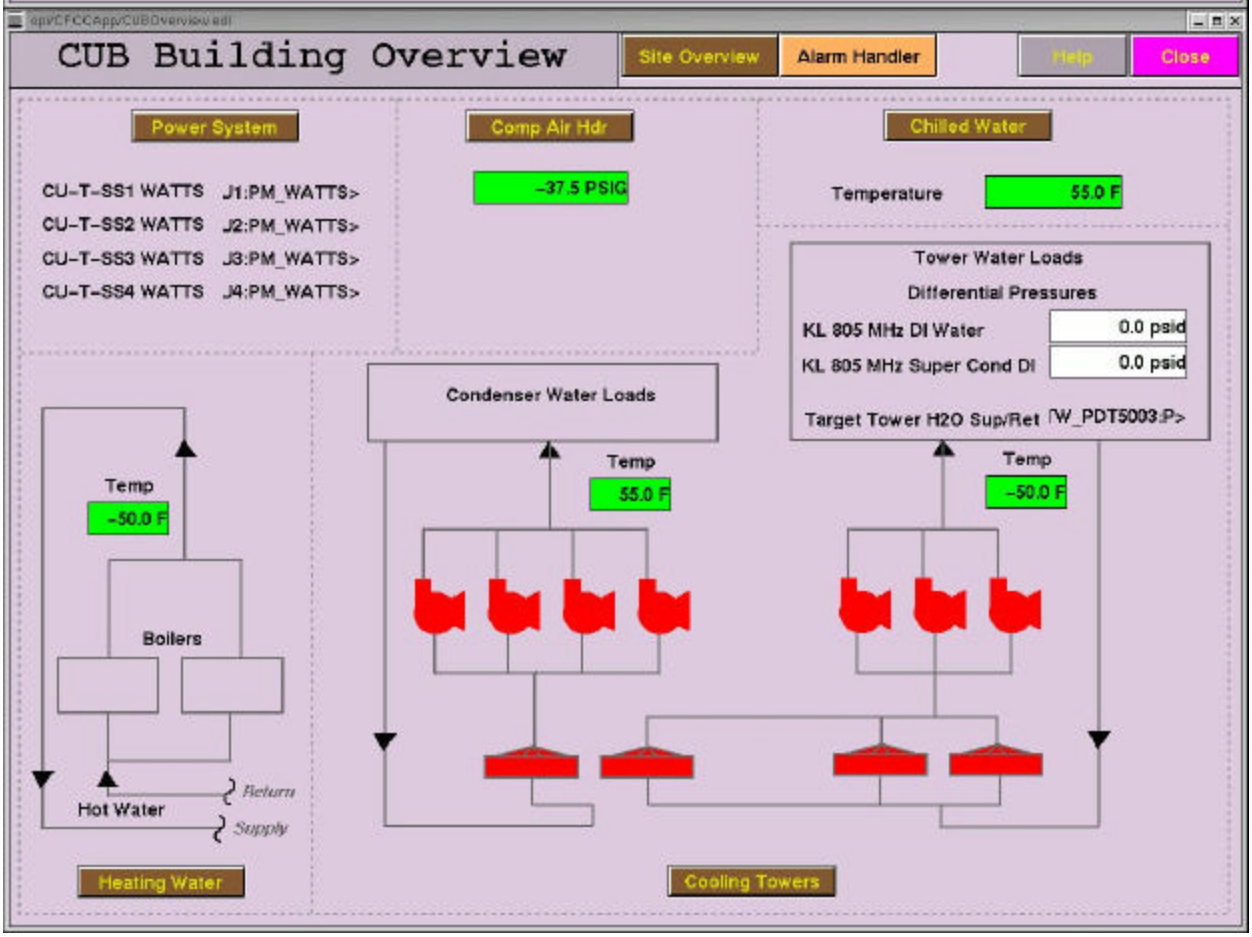

FE Building Overview
Site Overview
Alarm Handler
Help
Close
Power System
FE-SS-1
WATTS -50.0 F
PF -50.0 F
VA -50.0 F
Comp Air Hdr
0.0 psid PSIA
FE Air Handler
FE Bldg Temp 0.0 F
FE Bldg Humidity 0.0 % RH
STATUS
Off/On
Auto/Semi Auto
FA Shutdown
RAFT Magnets Turbomolecular Pumps
RFQ / MEBT Structures
Klystrons, Circulators, Blue Box
RFQ, DTL Circulator Loads
Temp
Cond
0.0 F
0.0 MegOhm
RFQ Chillers
Supply
Return
Chilled Water
Heat Exchanger
0.0 % Open
Tower Water
Chilled Water
DI Water Sys 2
Klystron Glycol

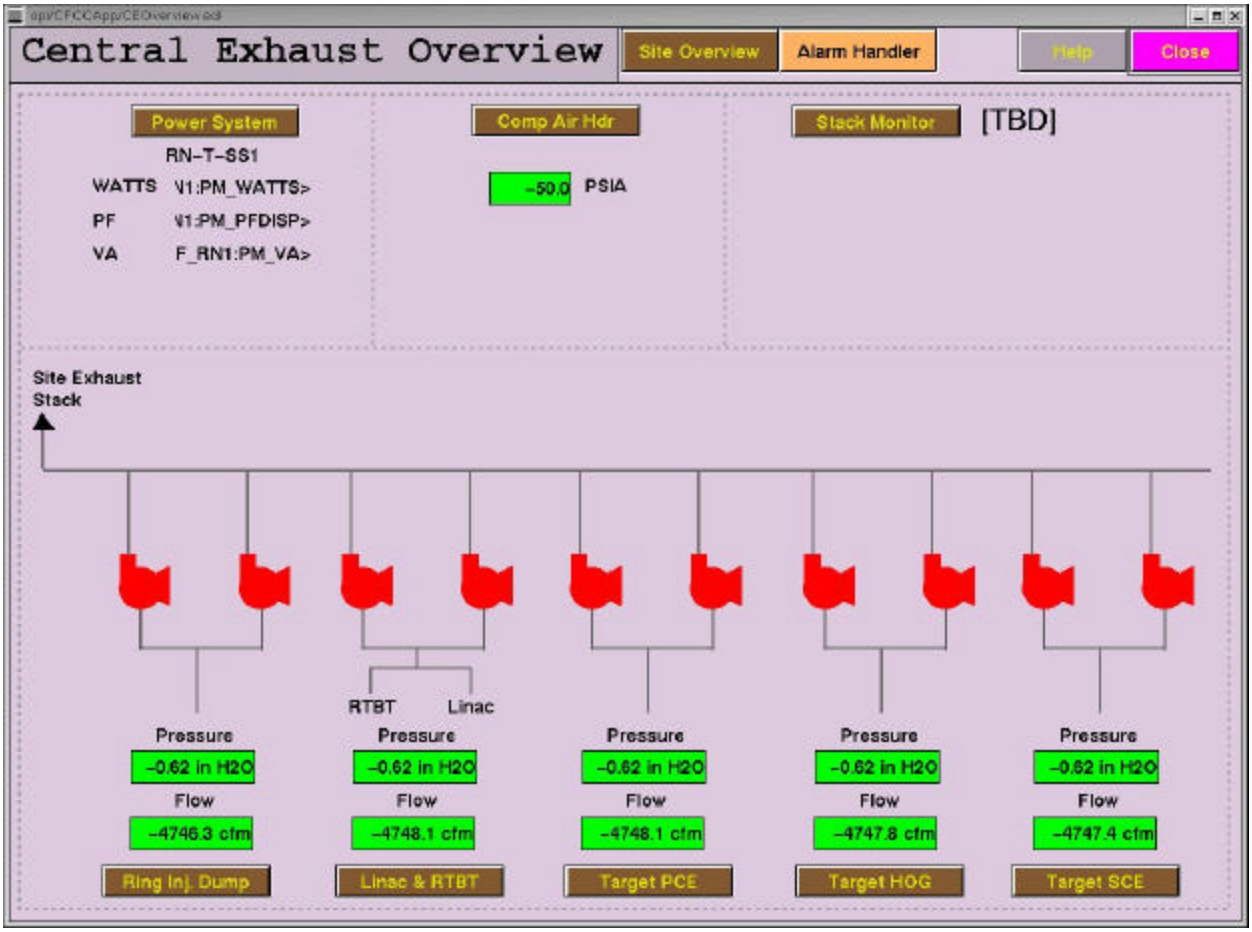

Klystron Building Overview
Site Overview
Alarm Handler
Help
Close
Power System
KL-T-SS1 WATTS L1:PM_WATTS>
KL-T-SS2 WATTS L2:PM_WATTS>
KL-T-SS3 WATTS L3:PM_WATTS>
KL-T-SS4 WATTS L4:PM_WATTS>
Comp Air Hdr
0.0 PSIG
Process Waste
KL HVAC 1
KL Bldg Temp 1 0.0 F
KL Bldg Humidity 1 0.0 % RH
FA Shutdown 1
KL HVAC 2
KL Bldg Temp 2 0.0 F
KL Bldg Humidity 2 0.0 % RH
FA Shutdown 2
KL HVAC 3
KL Bldg Temp 3 0.0 F
KL Bldg Humidity 3 0.0 % RH
FA Shutdown 3
KL HVAC 4
KL Bldg Temp 4 0.0 F
KL Bldg Humidity 4 0.0 % RH
FA Shutdown 4
KL HVAC 5
KL Bldg Temp 5 0.0 F
KL Bldg Humidity 5 0.0 % RH
FA Shutdown 5
Bldg Press East .0 in H2O
Bldg Press West .0 in H2O
RFQ, DTL Circulator Loads
Klystrons, Circulators, Blue Box
Klystrons, Circulators
Klystrons, Circulators
Klystrons, Circulators
Temp
Cond
0.0 F
0.0 MegOhm
Heat Exchanger
0.0 % Open
Tower Water
Supply
Return
Klystron Glycol
DI Water Sys 2
DI Water Sys 3
DI Water Sys 5
DI Water Sys 6


HEBT/RTBT Building Overview
Site Overview
Alarm Handler
Help
Close
Power System
HE-T-SS1
WATTS
PF
VA
RS-T-SS6
WATTS
PF
VA
Compressor Air Header
-50.0 PSIG
HEBT Air Handler
HEBT Bldg Temp
-50.0 F
HEBT Bldg Humidity
-25.0 %
STATUS
Off
Auto/Semi Auto
FA Shutdown
RTBT Air Handler
RTBT Bldg Temp
-50.0 F
RTBT Bldg Humidity
STATUS
Off
Auto/Semi Auto
FA Shutdown
Technical Equipment
Temp
Cond
-50.0 F
Technical Equipment
Temp
Cond
-50.0 F
Heat Exchanger
0.0 %
Heat Exchanger
0.0 %
Supply
Tower Water
Return
Process Waste
HEBT DI Water Sys
RTBT DI Water Sys


RSB Building Overview
Site Overview
Alarm Handler
Help
Close
Power System
RN-T-SS1 WATTS
RN-T-SS2 WATTS
RN-T-SS3 WATTS
PB-T-SS1 WATTS
RN-T-SS4 WATTS
RS-T-SS6 WATTS
RN-T-SS7 WATTS
Compressed Air Header
0.0 PSIG
RSB Air Handler
RSB Bldg Temp
0.0 F
RSB Bldg Humidity
0
STATUS
Off
Auto/Semi Auto
FA Shutdown
Technical Equipment
Temp
0.0 F
Cond
0.0
Technical Equipment
Temp
0.0 F
Cond
0.0
Technical Equipment
Temp
0.0 F
Cond
0.0
Heat Exchanger
0.0
Heat Exchanger
0.0
Heat Exchanger
0.0
Supply
Tower Water
Return
Process Waste
RF Loop DI
Magnet DI
Power Supply DI


CUB Building Overview
Site Overview
Alarm Handler
Help
Close
Power System
CU-T-SS1 WATTS J1:PM_WATTS>
CU-T-SS2 WATTS J2:PM_WATTS>
CU-T-SS3 WATTS J3:PM_WATTS>
CU-T-SS4 WATTS J4:PM_WATTS>
Comp Air Hdr
-37.5 PSIG
Chilled Water
Temperature
0.0 F
Tower Water Loads
Differential Pressures
KL 805 MHz DI Water
0.0 psid
KL 805 MHz Super Cond DI
0.0 psid
Target Tower H2O Sup/Ret
W_PDT5003:P>
Condenser Water Loads
Temp
0.0 F
Temp
-50.0 F
Temp
-50.0 F
Boilers
Hot Water
Return
Supply
Heating Water
Cooling Towers


CUB Building Overview
Site Overview
Alarm Handler
Help
Close
Power System
CU-T-SS1 WATTS J1:PM_WATTS>
CU-T-SS2 WATTS J2:PM_WATTS>
CU-T-SS3 WATTS J3:PM_WATTS>
CU-T-SS4 WATTS J4:PM_WATTS>
Comp Air Hdr
-37.5 PSIG
Chilled Water
Temperature
55.0 F
Tower Water Loads
Differential Pressures
KL 805 MHz DI Water
0.0 psid
KL 805 MHz Super Cond DI
0.0 psid
Target Tower H2O Sup/Ret
W_PDT5003:P>
Condenser Water Loads
Temp
55.0 F
Temp
-50.0 F
Temp
-50.0 F
Boilers
Hot Water
Return
Supply
Heating Water
Cooling Towers


Central Exhaust Overview
Site Overview
Alarm Handler
Help
Close
Power System
RN-T-SS1
WATTS
PF
VA
Comp Air Hdr
-50.0
PSIA
Stack Monitor
[TBD]
Site Exhaust
Stack
RTBT
Linac
Pressure
-0.62 in H2O
Flow
-4746.3 cfm
-4748.1 cfm
-4748.1 cfm
-4747.8 cfm
-4747.4 cfm
Ring Inj. Dump
Linac & RTBT
Target PCE
Target HOG
Target SCE

Target Building Overview (under construction)